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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,915	08/02/2001	Edward Robert Fyfe	2102455-900410	6503
26379	7590	03/26/2004	EXAMINER	
GRAY CARY WARE & FREIDENRICH LLP 2000 UNIVERSITY AVENUE E. PALO ALTO, CA 94303-2248			POE, MICHAEL I	
			ART UNIT	PAPER NUMBER
			1732	

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/920,915	Applicant(s) FYFE, EDWARD ROBERT	
	Examiner Michael I Poe	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-27 and 29-31 is/are rejected.
- 7) ☒ Claim(s) 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. <u>20040311</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20020819, 20010802</u> . | 6) <input type="checkbox"/> Other: _____. |

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DETAILED ACTION

Amendments

1. Applicant's amendment filed on August 2, 2001 has been entered. Based upon the entry of this amendment, no existing claims have been amended, existing claims 1-24 have been canceled, and no new claims have been added. Claims 25-31 are currently pending.

Priority

2. If applicant desires priority under 35 U.S.C. 120 based upon a previously filed application, specific reference to the earlier filed application must be made in the instant application. For benefit claims under 35 U.S.C. 120, 121 or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of the applications. This should appear as the first sentence of the specification following the title, preferably as a separate paragraph unless it appears in an application data sheet. The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. ____" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application.

Although the specification was amended to include specific reference to the earlier filed applications, the reference does not include the current status of all nonprovisional parent applications as required. The reference to the parent applications should be amended, in response to this Office action, to include the status of all nonprovisional parent applications.

Drawings

3. The drawings were received on August 2, 2001. These drawings are acceptable.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 26 and 29-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 26, 29 and 31 includes the following recitations "wherein the plurality of fibers elongate as concrete is poured into the enclosure of the composite shell due to a weight of the concrete, and partially shrink back as the concrete dries to compensate for shrinkage of the concrete", "wherein the water-impermeable liner is wrapped with its lateral edges secured together to line an inner wall surface of the composite shell and protects the composite shell from alkalinity in the concrete core" and "wherein the liner protects the composite shell from alkalinity in the concrete". These recitations are generally confusing because it is unclear whether or not concrete is actually poured into the composite shell. Although these recitations hint at a step of pouring concrete, they don't actually provide a positive step of pouring concrete. Without this positive step of pouring concrete, it is not clear what product is manufactured by the claimed process (e.g., a concrete support structure having the composite shell bonded to the concrete or composite shell capable of elongating, shrinking and protecting). For the purpose of this Office action, the examiner has assumed that the claims include a positive step of pouring concrete into the enclosure to form a concrete support structure having the composite shell bonded to the concrete / concrete core as set forth in the Applicant's original disclosure.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,328,142 (Weekers) in view of U.S. Patent No. 4,900,383 (Dursch et al.).

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Claim 25

Weekers teaches a method of forming a concrete column forming tube (a method of manufacturing a composite shell) including forming a concrete column forming tube using conventional convolute winding techniques including a wound plastic film layer that is substantially impervious to water positioned anywhere between the inside and outside of the tube wall and a plurality of wound paper layers impregnated with a water proof adhesive material (applying a liner, the liner including at least one sheet of a water-impermeable material; applying a fabric layer having a plurality of fibers to the liner; impregnating the fabric layer with a resin matrix to form a resin-impregnated fabric layer; a composite shell having an inner wall surface defining an enclosure into which concrete may be poured and allowed to harden) (column 1, lines 5-9; column 2, lines 26-46; column 2, line 67 - column 3, line 10; column 3, lines 27-52).

Weekers does not specifically teach applying the liner to an exterior surface of a tubular member and removing the tubular member once the resin cures to form the composite shell. However, Dursch et al. teach a method of forming convolutely lined and wrapped composite tubes including anchoring a first end of a lining material to a support prior to wrapping the lining material at least once around the support; wrapping the lining material at least once around the support and anchoring the second end of the lining material to the lining material (applying a liner to an exterior surface of a tubular member); wrapping and surrounding the lining material with a tubing precursor material (applying a fabric layer having a plurality of fibers to the liner; impregnating the fabric layer with a resin matrix to form a resin-impregnated fabric layer); subjecting the support, lining material and the tubing precursor material to curing conditions; and removing the support from the cured product to form a uniformly lined tube (removing the tubular member once the resin matrix cures to form a composite shell) (column 2, lines 11-29). As illustrated in Figures 5 and 6, Dursch et al. teach that the support may be a hollow tube or solid mandrel. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use convolute winding techniques including wrapping the liner around a tubular member and removing the tubular member after curing in the process of Weekers as taught by Dursch et al. to provide an economical and uncomplicated convolute winding process that was

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easy to applying to a number of tubing systems and to protect the interior of the tube from damage or degradation due to adverse environmental conditions (see column 2, lines 51-65 of Dursch et al.).

With regard to the recitation of a "stay-in-place composite shell", the examiner stipulates that this recitation only requires the capability of composite shell staying in place and does not require that the composite shell actually stays in place. Specifically, in order for the claim to require the composite shell to actually stay in place, the claim must recite same type of bonding between the composite shell and concrete poured therein. The claim as currently written does not require such. With regard to the capability of the concrete column forming tube staying in place, the examiner stipulates that one of ordinary skill in the art would have obviously recognized, due to the waterproof structure of the concrete column forming tube in the process of Weekers in view of Dursch et al., that the concrete column forming tube would in fact be capable of staying in place even though it was not intended to stay in place in the process of Weekers in view of Dursch et al. As such, the examiner stipulates that the process of Weekers in view of Dursch et al. is readable on the claim as currently written for all of the reasons set forth above.

8. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,328,142 (Weekers) in view of U.S. Patent No. 4,900,383 (Dursch et al.) in further view of U.S. Patent No. 4,629,529 (Kadunce).

Claim 27

The discussion of Weekers and Dursch et al. as applied to claim 25 above applies herein.

Weekers in view of Dursch et al. does not specifically teach suspending the tubular member with the liner applied thereto and rotating the tubular member while wrapping the fabric layer around the liner. However, Kadunce teaches a method for convolute or spiral winding of composite materials including wrapping a continuous ribbon of flexible material about a mandrel after supplying glue to the underside thereof and rotating the mandrel while wrapping the ribbon about the mandrel to form a precisely wound cylindrical tube (suspending the tubular member; rotating the tubular member while wrapping the fabric layer) (column 7, lines 1-21; Figures; claims). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to wrap the paper layers about a suspended support body having the liner layer on the exterior surface

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thereof while rotating the support body in the process of Weekers in view of Dursch et al. as taught by Kadunce to reduce and/or eliminate many of the control factors inherent in spiral winding while providing a convolute winding method capable of higher production speeds (see column 2, lines 55-66 of Kadunce).

Allowable Subject Matter

9. Claims 26 and 29-31 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.
10. Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
11. The following is a statement of reasons for the indication of allowable subject matter:
 - (1) With regard to the claims 26 and 29-31, the prior art of record does not teach or suggest the claimed methods of a concrete support structure using a stay-in-place composite shell, as a whole, especially including forming a stay-in-place composite shell having an inner wall surface defining an enclosure and pouring concrete into the enclosure to form a concrete support structure having the composite shell bonded to the concrete wherein a plurality of the fibers of the composite shell elongate as the concrete is poured into the enclosure of the composite shell due to a weight of the concrete and partially shrink back as the concrete dries to compensate for shrinkage of the concrete and wherein the liner of the composite shell protects the composite shell from alkalinity in the concrete. Note that the indication of allowable subject matter is based upon the assumptions set forth by the examiner in the rejection under 35 U.S.C. 112, second paragraph, above.
 - (2) With regard to claim 28, the prior art of record does not teach or suggest the claimed method of manufacturing a stay-in-place composite shell, as a whole, especially including cutting a slit in a tubular member used as a support, pulling a portion of the tubular member inward at the slit to reduce the diameter of the tubular member; and pulling the tubular member away from the liner to form a composite shell having an inner wall surface defining an enclosure.

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Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 1,858,512 (Langenberg et al.), U.S. Patent No. 2,677,165 (Copenhaver et al.), U.S. Patent No. 3,654,018 (Bogue et al.), U.S. Patent No. 4,105,739 (Dave), U.S. Patent No. 4,786,341 (Kobatake et al.), U.S. Patent No. 5,376,316 (Weekers), U.S. Patent No. 5,587,035 (Greene) and U.S. Patent No. 5,874,016 (Bacon, Jr. et al.) have been cited of interest to show the state of the art at the time the invention was made.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael I Poe whose telephone number is (571) 272-1207. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Poe/mip



**MICHAEL COLAIANNI
PRIMARY EXAMINER**